AMENDMENTS TO THE CLAIMS

Claims 1-3 (canceled)

4. (currently amended) A sensor ~~according to claim 3, wherein~~ for measuring applied forces within an object body, comprising:

a mat having a lower plane comprising a plurality of discrete capacitor plates mutually arranged in a spaced apart two dimensional array about an interrogation electrode and an upper conductive plate repositionable relative to the plurality of discrete capacitor plates responsive to the applied forces from the object body; and means for measuring the applied forces within the object body by resolving and measuring in three dimensions a stress vector resulting from the movement of the upper mat conductive plate relative to the lower capacitor plates;

the mat comprises a dielectric body, and the plurality of discrete capacitor plates being capacitively coupled to the interrogation electrode and to the upper conductive plate and wherein the capacitance between the lower discrete capacitor plates and the interrogation electrode changes responsive to a change in position between the mat upper conductive plate and the mat lower capacitor plates; and

the means for measuring the applied forces within the object body comprises means for comparing the sign and magnitude of the capacitance changes between the lower capacitor plates and the interrogation electrode.

Claims 5-6 (canceled)

7. (previously presented) A sensor for measuring applied forces within an object body, comprising:

a mat having a lower plane and an upper plane repositionable relative to the lower plane in at least one direction responsive to the applied forces from the object body; and

means for measuring the applied forces within the object body by measuring the movement of the upper mat plane relative to the lower mat plane;

wherein the mat comprises a dielectric body having a plurality of lower electrodes disposed in a predetermined pattern and an upper electrode, the upper

electrode being repositionable in at least one direction relative to the lower electrodes responsive to applied forces within the object body;

wherein each lower electrode is capacitively coupled to an interrogation source, the capacitance between the lower electrodes and the interrogation source changing responsive to a change in position between the mat upper electrode and the mat lower electrodes and

wherein the means for measuring the applied forces within the object body comprises means for comparing the sign and magnitude of the capacitance changes between the lower electrodes and the interrogation source.

8. (original) A sensor according to claim 7, wherein the lower electrodes are disposed in a predetermined pattern such that the capacitance changes between the lower electrodes and the interrogation source are indicative of the magnitude and direction of movement of the mat upper electrode relative to the mat lower electrodes.

9. (original) A sensor according to claim 8, wherein the interrogation source is centrally disposed relative to the mat lower electrodes.

10. (original) A sensor according to claim 8, wherein the lower electrodes are disposed in a predetermined pattern that resolves in three dimensions the applied forces within the object body.

11. (original) A sensor according to claim 10, wherein the sign and magnitude of the applied forces is inferred exclusively from the sign and magnitude of changes in capacitance between the lower electrodes and the interrogation source.

Claims 12-14 (canceled)

15. (currently amended) A sensor ~~according to claim 12, wherein~~ for measuring applied force within an object body, comprising:

a plurality of discrete sensor components patterned into a linear array with each sensor component mechanically isolated from an adjacent sensor, each sensor component comprising a mat having a plurality of lower capacitor plates disposed

about and capacitively coupled to an interrogation electrode and an upper conductive plate repositionable relative to the lower plane in at least one direction responsive to the applied forces within the object body; and

means for measuring the applied force within the object body by measuring the movement of the upper mat conductive plate relative to the lower mat capacitor plates; and

the means for measuring the applied force within the object body comprises means for comparing the sign and magnitude of ~~the~~ capacitance changes between the lower capacitor plates and the interrogation electrode.

Claims 16-17 (canceled)

18. (previously presented) A method for measuring applied forces within an object body, comprising the steps:

(a) locating a sensor proximate the body, the sensor comprising a mat having a lower plane and an upper plane repositionable relative to the lower plane in at least one direction responsive to the applied forces within the object body;

(b) connecting means to the mat for measuring the applied forces within the object body by measuring the movement magnitude and direction of the upper mat plane relative to the lower mat plane; and

wherein the mat is formed at least partially of dielectric material having a plurality of lower electrodes disposed in a predetermined pattern and an upper electrode repositionable in at least one direction relative to the lower electrodes responsive to applied forces, the method comprising the further steps:

capacitively coupling the lower electrodes to an interrogation source, the capacitance between the lower electrodes and the interrogation source changing responsive to a change in position between the mat upper electrode and the mat lower electrodes; and

comparing the sign and magnitude of the capacitance changes between the lower electrodes and the interrogation source.

19. (original) A method according to claim 18, wherein further comprising the step of placing a plurality of the sensors into a linear array with each sensor mechanically

isolated from an adjacent sensor.

20. (original) A method according to claim 19, wherein further comprising the step of placing a plurality of linear arrays of sensors into a two dimensional array with each sensor mechanically isolated from an adjacent sensor.

The above amendments are supported by the original specification.